IN THE CLAIMS

1. (Currently Amended) ~~Method~~ A method of evaluating ~~the~~ noise related to data streams issuing from a turbo-encoder having at least first and second encoders, ~~these~~ the data streams being intended for a turbodecoder having at least first and second elementary decoders, according to which:

[[-]] an operation of estimating the noise ~~(70)~~ is performed, ~~consisting of~~ including determining an estimate of the noise related to ~~the~~ a systematic output of the turbo-encoder, an estimate of the noise related to the data stream issuing from the first encoder, and an estimate of the noise related to the data stream issuing from the second encoder,[[;]]

said method ~~being characterised in that it also includes~~ including steps according to which the following operations are performed:

[[-]] an addition operation, [[(72)]] of adding at least two of the estimate of the noise related to the systematic output, the estimate of the noise related to the data stream issuing from ~~said~~ the first encoder, and the estimate of the noise related to the data stream issuing from ~~said~~ the second encoder;

[[-]] a division operation, [[(74)]] of dividing ~~the~~ a result of said addition operation by ~~the~~ a number of augends added in said addition operation;

[[-]] an inversion operation, [[(76)]] of determining ~~the~~ an inverse of ~~the~~ a result of said division operation as a noise factor; and

[[-]] a multiplication operation, [[(78)]] of multiplying ~~said~~ the noise factor with the data stream issuing from at least one of ~~said~~ the first encoder, the second encoder, and the systematic output.

2. (Currently Amended) ~~Method~~ The method according to Claim 1, ~~characterised~~ in ~~that~~ which:

[[-]] in said addition operation [[(72)]], the estimate of the noise related to ~~said~~ the systematic output, the estimate of the noise related to the data stream issuing from the first encoder, and the estimate of the noise related to the data stream issuing from the second encoder are added,

[[-]] in said division operation [[(74)]], the result of said addition operation is divided by three, and

[[-]] in said multiplication operation [[(78)]], ~~said~~ the noise factor is multiplied with each of the data streams issuing from ~~said~~ the first encoder, the second encoder, and the systematic output.

3. (Currently Amended) ~~Method~~ The method according to Claim 1, ~~characterised~~ in ~~that~~ which:

[[-]] said addition operation [[(72)]] comprises [[a]] first and second addition operations, said first addition operation ~~consisting of~~ including adding the estimate of the noise related to ~~said~~ the systematic output and the estimate of the noise related to the data stream issuing from the first encoder, and said second addition operation ~~consisting of~~ including adding the estimate of the noise related to said the systematic output and the estimate of the noise related to the data stream issuing from the second encoder,

[[-]] said division operation [[(74)]] comprises [[a]] first and second division operations, said first division operation ~~consisting of~~ including dividing by two ~~the~~ a result of said first addition operation, and said second division operation ~~consisting of~~ including dividing by two ~~the~~ a result of said second addition operation,

[[-]] in said inversion operation [[(76)]], the inverse of the results of said first and second division operations are determined as first and second noise factors, respectively, and

[[-]] said multiplication operation [[(78)]] comprises [[a]] first, second, third and fourth multiplication operations, said first multiplication operation ~~consisting of~~ including multiplying the data stream issuing from ~~said~~ the first encoder by ~~said~~ the first noise factor, said second multiplication operation ~~consisting of~~ including multiplying the data stream issuing from ~~said~~ the systematic output and intended for the first elementary ~~turbodecoder~~ decoder by ~~said~~ the first noise factor, said third multiplication operation ~~consisting of~~ including multiplying the data streams issuing from the second encoder by ~~said~~ the second noise factor, and said fourth multiplication operation ~~consisting of~~ including multiplying the data streams issuing from ~~said~~ the systematic output and intended for the second elementary ~~turbodecoder~~ decoder by ~~said~~ the second noise factor.

4. (Currently Amended) ~~Method~~ The method according to Claim 1, 2 or 3, ~~characterised~~ in ~~that~~ which, during ~~the~~ said noise estimation operation [[(70)]], ~~the~~ a moving average of ~~the~~ a sum of the Euclidian distances of each noisy symbol received to ~~the~~ a closest theoretical symbol is determined respectively for each symbol in the data stream issuing from the systematic output, for each symbol in the data stream issuing from the first encoder, and for each symbol in the data stream issuing from the second encoder.

5. (Currently Amended) ~~Method~~ The method according to Claim 4, ~~characterised~~ in ~~that~~ which, for determining ~~said~~ the moving average, a comparison operation is performed, ~~consisting of~~ comprising determining to which Voronoï region each noisy symbol received belongs.

6. (Currently Amended) ~~Method~~ The method according to any of Claims 1 to 3, ~~characterised in that it also includes~~ further comprising a step according to which:

[[-]] a delay application operation [[(80)]] is performed, ~~consisting of~~ comprising applying a delay to the data streams issuing from the systematic output and the first and second encoders, prior to the multiplication operations [[(78)]].

7. (Currently Amended) ~~Method~~ The method according to any of Claims 1 to 3, ~~characterised in that said~~ in which the first and second encoders are recursive systematic convolutional encoders.

8. (Currently Amended) ~~Device~~ A device for evaluating ~~the~~ noise related to data streams issuing from a turbo-encoder having at least first and second encoders, ~~said~~ the data streams being intended for a turbodecoder having at least first and second elementary decoders, said device having:

[[-]] noise estimation means ~~(21, 23, 25, 41, 42, 44)~~, for determining an estimate of the noise related to ~~the~~ a systematic output of ~~the~~ said turbo-encoder, an estimate of the noise related to the data stream issuing from ~~the~~ said first encoder, and an estimate of the noise related to the data stream issuing from ~~the~~ said second encoder,[[;]]

said device ~~being characterised in that it also has~~ comprising:

[[-]] addition means ~~(26, 45, 46)~~, for adding at least two of the estimate of the noise related to ~~said~~ the systematic output, the estimate of the noise related to the data stream issuing from said first encoder, and the estimate of the noise related to the data stream issuing from said second encoder;

[[-]] division means ~~(27, 47, 48)~~, for dividing ~~the~~ a result supplied by said addition means (26, 45, 46) by ~~the~~ a number of augends added by said addition means;

[[-]] inversion means ~~(27, 47, 48)~~, for determining ~~the~~ an inverse of ~~the~~ a result supplied by said division means ~~(27, 47, 48)~~ as a noise factor; and

[[-]] multiplication means ~~(28, 29, 30, 49, 50, 51, 52)~~, for multiplying ~~said~~ the noise factor with the data stream issuing from at least one of said first encoder, said second encoder, and said systematic output.

9. (Currently Amended) ~~Device~~ The device according to Claim 8, ~~characterised~~ in ~~that~~ which:

[[-]] said addition means [[(26)]] is adapted to add the estimate of the noise related to ~~said~~ the systematic output, the estimate of the noise related to the data stream issuing from ~~the~~ said first encoder, and the estimate of the noise related to the data stream issuing from ~~the~~ said second encoder,

[[-]] said division means [[(27)]] is adapted to divide ~~the~~ a result of said addition means by three, and

[[-]] said multiplication means ~~(28, 29, 30)~~ is adapted to multiply ~~said~~ the noise factor with each of the data streams issuing from said first encoder, said second encoder, and said systematic output.

10. (Currently Amended) ~~Device~~ The device according to Claim 8, ~~characterised~~ in ~~that~~ which:

[[-]] said addition means ~~(45, 46)~~ comprises first and second addition means, in which said first addition means ~~(45)~~ is adapted to add the estimate of the noise related to ~~said~~ the systematic output and the estimate of the noise related to the data stream issuing from the first encoder, and said second addition means [[(46)]] is adapted to add the estimate of the

noise related to ~~said~~ the systematic output and the estimate of the noise related to the data stream issuing from ~~the~~ said second encoder,

[[-]] said division means ~~(47, 48)~~ comprises [[a]] first and second division ~~operations~~ means, in which said first division means ~~(47)~~ is adapted to divide by two ~~the~~ a result of said first addition means, and said second division means ~~(48)~~ is adapted to divide by two ~~the~~ a result of said second addition means,

[[-]] said inversion means ~~(47, 48)~~ is adapted to determine the inverse of the results ~~of~~ provided by said first and second division ~~operations~~ means as first and second noise factors, respectively, and

[[-]] said multiplication means ~~(49, 50, 51, 52)~~ comprises [[a]] first, second, third, and fourth multiplication means, in which said first multiplication means [[(49)]] is adapted to multiply the data stream issuing from said first encoder by ~~said~~ the first noise factor, said second multiplication means ~~(50)~~ is adapted to multiply the data stream issuing from ~~said~~ the systematic output and intended for the first elementary ~~turbodecoder~~ decoder by ~~said~~ the first noise factor, said third multiplication means ~~(51)~~ is adapted to multiply the data streams issuing from ~~the~~ said second encoder by ~~said~~ the second noise factor, and said fourth multiplication ~~operation~~ means ~~(52)~~ is adapted to multiply the data streams issuing from ~~said~~ the systematic output and intended for the second elementary ~~turbodecoder~~ decoder by ~~said~~ the second noise factor.

11. (Currently Amended) ~~Device~~ The device according to Claim 9 or 10, ~~characterised~~ in ~~that~~ which said noise estimation means ~~(41, 42, 44)~~ include means ~~(5, 82)~~ for determining ~~the~~ a moving average of ~~the~~ a sum of the Euclidian distances from each noisy symbol received to ~~the~~ a closest theoretical symbol, respectively for each symbol in the data stream issuing from the systematic output, for each symbol in the data stream issuing from ~~the~~ said first encoder, and for each symbol in the data stream issuing from ~~the~~ said second encoder.

12. (Currently Amended) ~~Device~~ The device according to Claim 11, ~~characterised~~ in ~~that~~ which said means ~~(5, 82)~~ for determining ~~said~~ the moving average include

comparison means ~~(10, 13)~~ for determining to which Voronoï region each noisy symbol received belongs.

13. (Currently Amended) ~~Device~~ The device according to any of Claims 8 to 10, ~~characterised in that it also includes~~ further comprising:

[[-]] delay application means ~~(40, 39, 43)~~, for applying a delay to the data streams issuing from the systematic output and ~~the~~ said first and second encoders, said delay application means ~~(40, 39, 43)~~ being disposed upstream of ~~the~~ said multiplication means ~~(50, 49, 52, 51)~~.

14. (Currently Amended) ~~Device~~ The device according to any of Claims 8 to 10, ~~characterised~~ in ~~that~~ which said first and second encoders are recursive systematic convolutional encoders.

15. (Currently Amended) ~~Digital~~ A digital signal processing apparatus, ~~characterised in that it has~~ having means adapted to implement a method according to any of Claims 1 to 3.

16. (Canceled)

17. (Currently Amended) ~~Telecommunications~~ A telecommunications network, ~~characterised in that it includes~~ including means adapted to implement a method according to any of Claims 1 to 3.

18. (Currently Amended) ~~Telecommunications~~ A telecommunications network, ~~characterised in that it includes~~ including a device according to any of Claims 8 to 10.

19. (Currently Amended) ~~Mobile~~ A mobile station in a telecommunications network, ~~characterised in that it has~~ having means adapted to implement a method according to any of Claims 1 to 3.

20. (Currently Amended) ~~Mobile~~ A mobile station in a telecommunications network, ~~characterised in that it has~~ having a device according to any of Claims 8 to 10.

21. (Currently Amended) Information storage means which can be read by a computer or microprocessor storing instructions of a computer program, ~~characterised in that it~~ in which said information storage means implements a method according to any of Claims 1 to 3.

22. (Currently Amended) Information storage means which is removable, partially or totally, and which can be read by a computer or microprocessor storing instructions of a computer program, ~~characterised in that it~~ in which said information storage means implements a method according to any of Claims 1 to 3.

23. (Currently Amended) ~~Computer~~ A computer program product, ~~characterised in that it comprises~~ comprising software code portions for implementing a method according to any of Claims 1 to 3.